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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* FRANK D. HUSSON JR.

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Appeal 2009-006297  
Application 10/039,277  
Technology Center 3700

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Decided: May 24, 2010

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Before JOHN C. KERINS, STEVEN D.A. MCCARTHY and  
MICHAEL W. O'NEILL, *Administrative Patent Judges*.

KERINS, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Frank D. Husson (Appellant) seeks our review under 35 U.S.C. § 134 of the final rejection of claims 1, 3, 6, 7, 9, 10, 12-15, 17-22, 26, 37-39, 43, 44 and 47, the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b) (2006). An oral hearing was held on May 11, 2010, with Stephen E. Reiter appearing on behalf of Appellant.

## SUMMARY OF DECISION

We AFFIRM.

## THE INVENTION

Appellant's invention is directed to a solar water pasteurizer. Independent claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A solar water pasteurizer comprising:

a flexible water-tight resealable container, wherein said container comprises a top and a bottom, wherein said bottom comprises at least one resealable opening, wherein said resealable opening comprises at least one water-tight spout with a mating resealable cap, wherein one or more reuseable temperature indicators for indicating the temperature history of the water contained in said container are positioned within said resealable cap, and wherein said temperature indicator is a glass tube containing wax therein that melts at pasteurization temperatures;

one or more energy converting structures therein, as an integral part of said container,

a first insulation structure on the top of said container, wherein said first insulation structure comprises gas contained within air-tight structures, and

a second insulation structure on the bottom of said container, wherein said second insulation structure is selected from gas contained within air-tight structures, closed cell foam or open cell foam,

wherein said insulation structures collectively are sufficient to enable said pasteurizer to achieve water temperatures of at least 60 °C, wherein said insulation structures are an integral part of said container.

#### THE REJECTIONS

The Examiner has rejected:

(i) claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 under 35 U.S.C. § 103(a) as being unpatentable over Wickramasuriya (GB 1,517,449, published July 12, 1978) (hereafter “GB ‘449”), in view of SODIS Technical Note # 17, Sodis Bags and Temperature Sensors (9/2000) (hereafter “SODIS”), Burkhardt (US 4,557,251, issued December 10, 1985), Ryder (US 3,939,968, issued February 24, 1976) and Brewer (US 2,847,067, issued August 12, 1958); and

(ii) claims 10, 14, 15 and 44 under 35 U.S.C. § 103(a) as being unpatentable over the references identified in (i) above, and further in view of Stoumen (US 6,263,870 B1, issued July 24, 2001).

#### ISSUE

The issue joined on appeal is whether the evidence, taken as a whole, and the analysis based thereon, is sufficient to support a conclusion that the

subject matter of the claims on appeal would have been obvious to a person of ordinary skill in the art.

#### PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103(a) if, “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007) (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”).

Whenever prima facie obviousness is found with respect to the subject matter on appeal, and Appellant furnishes evidence of secondary considerations, it is our duty to reconsider the issue of obviousness anew, carefully weighing the evidence for obviousness with respect to the evidence against obviousness. *See, e.g., In re Eli Lilly & Co.*, 902 F.2d 943, 945 (Fed. Cir. 1990). We are also mindful that the objective evidence of nonobviousness in any given case may be entitled to more or less weight depending on its nature and its relationship with the merits of the invention. *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983).

## ANALYSIS

*Claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47--Obviousness--GB '449 in view of SODIS, Burkhardt, Ryder and Brewer*

Appellant presents arguments directed to the patentability of independent claim 1, and does not present any separate arguments for any of the other claims rejected on the same grounds. Claim 1 will thus be taken as representative of the entire group, and claims 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 will stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Appellant contends that the GB '449 patent fails to disclose or suggest the use of a temperature indicator, the presence of insulating structures, and employing the container therein to achieve a minimum desired temperature of 60° C. (Appeal Br. 12). The Examiner states that the GB '449 patent shows and discloses the invention of claim 1 with the possible exception of the claimed temperature indicator and the use of foam insulation. (Answer 4). The latter is called for in two of the three recited options for the claimed second insulation structure.

The Examiner cites to the SODIS reference as disclosing a reusable water temperature indicator in a portable water treatment container, to the Ryder patent as disclosing a reusable water temperature indicator positioned on a resealable cap, and to the Brewer patent as disclosing a reusable water temperature indicator that includes a glass tube containing a meltable wax. (Answer 4-5). The Examiner notes that all three of these references disclose that the water temperature indicators therein are intended to inform a user that a particular desired water temperature has been attained. (*Id.*).

The Examiner further cites to the Burkhardt patent as evidence that persons of ordinary skill in the art would have been aware of the desirability

of reducing heat loss from a body of water being heated to pasteurize or sterilize the water, in employing a portable solar water processing apparatus. (Answer 5). The Examiner points out that Burkhardt discloses using a layer of foam insulation on the bottom (and sides) of the container surrounding the water body, to reduce heat loss. (*Id.*).

The Examiner concludes that it would have been obvious to provide the solar water heating container disclosed in GB '449 with a temperature indicator as claimed and with an insulation structure on the bottom of the container, and to operate the modified container for a period of time so as to achieve a water temperature of at least 60° C., in view of the teachings of SODIS, Ryder, Brewer and Burkhardt. (Answer 6, 9-10).

Appellant counters that the SODIS reference fails to disclose several of the elements set forth in claim 1, and is limited to teaching a bag for retaining water that includes a reusable temperature indicator which indicates whether a temperature of 50° C. has been attained. (Appeal Br. 13). Aside from the fact that the Examiner points out that SODIS Technical Note #9 contemplates heating the water to a temperature of up to 60° C. (Answer 12), the SODIS patent is not relied on as disclosing or suggesting claim element, but rather as evidence that it was known in the art to use a temperature indicator in connection with a portable or small scale solar water treatment device. Appellant's arguments as to the other alleged deficiencies of the teachings of SODIS are seen as an attack on the reference individually, and are not persuasive of nonobviousness. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant contends that reliance on the teaching in Burkhardt to modify the GB '449 device to provide a foam insulative layer on the bottom

of the container is in error, in that the Burkhardt container has a rigid frame and is thus not conducive to use as a portable water pasteurizer. (Appeal Br. 13). To the extent that portability is even relevant to the propriety of the combination of teachings, Appellant's contention is belied by the introductory statement in Burkhardt, which states that "... the invention relates to a device which is readily portable ...". (Burkhardt, col. 1, ll. 5-6). Appellant's argument is thus not persuasive of nonobviousness.

Appellant contends that reliance on the Ryder patent is improper, in that Ryder constitutes non-analogous art. (Appeal Br. 13-14). Appellant correctly notes that Ryder is directed to a device for holding contact lenses, and contends that this is a field that is unrelated to the field of Appellant's endeavor. Assuming, *arguendo*, that this contention is accurate, the inquiry does not end there. If a reference is reasonably pertinent to a problem with which Appellant was concerned, that is, if it is one which, because of the matter with which it deals, logically would have commended itself to the attention of the person of ordinary skill in the art in considering such problem, then it is appropriate to rely on that reference. *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992); *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

Here, Appellant contends that an inventor seeking to develop a simple solar water pasteurizing device would not consider a contact lens holder for solutions to problems encountered. Appellant also points out that Ryder does not involve the use of solar energy, but instead relies on an external heating device. (Appeal Br. 14). These assertions are largely related to whether Ryder is in the same field of endeavor as Appellant, rather than



whether any teachings in Ryder would or would not be reasonably pertinent to problems faced by the inventor.

Appellant does not dispute the Examiner's finding (Answer 4) that Ryder teaches a reusable water temperature indicator that allows a user to determine a temperature history of the water by visual inspection of a meltable material in a transparent container, and that the temperature indicator is positioned on a container-sealing cap. Appellant points to nothing in Ryder or elsewhere in the prior art that evidences that water temperature indicators in fields other than solar water pasteurizers involve design considerations that would generally exclude them from being considered by persons of ordinary skill in the art in the field of solar water pasteurizers. We are thus not persuaded that Ryder falls into the category of non-analogous art.

Appellant argues that Brewer discloses only a temperature indicator, and does not disclose a device for heating or pasteurization of water, nor of using the disclosed temperature indicator in a pasteurization context. (Appeal Br. 14). As with the Ryder reference above, Appellant has presented no persuasive argument that the teachings of Brewer are not reasonably pertinent to problems that would be encountered with temperature indicators to be used in the field of endeavor involving the design of solar water pasteurizers. Appellant further states that Brewer contains no teaching or suggestion to position the temperature indicator within a cap. (*Id.*). Given that Brewer is not relied on for such a teaching, the argument is seen as nothing more than an individual attack on the Brewer reference.

Appellant additionally contends that the Examiner has failed to establish prima facie obviousness, in that, “none of the analogous references cited teach or suggest a pasteurizer able to achieve water temperatures of at least 60° C.” (Reply Br. 2). Appellant asserts that his arguments demonstrate that none of GB ‘449, SODIS, Burkhardt and Brewer teaches or suggests such a feature. (*Id.*). We disagree. Not only does the GB ‘449 patent disclose in an example (p. 2, ll. 58-60) the attainment of temperatures (58-59° C.) immediately adjacent to the claimed target temperature<sup>1</sup>, which is indicative that the container without modification could enable the achievement of a water temperature of at least 60° C., the Burkhardt patent explicitly describes achieving a water boiling temperature (*see, e.g.*, Burkhardt, col. 1, l. 25), which would be considerably higher than 60° C., *i.e.*, on the order of 100° C. Adding a bottom layer of foam insulation, as taught by Burkhardt, to the GB ‘449 container, would reduce heat loss in that container such that the insulation would be sufficient to enable the achievement of water temperatures of at least 60° C.

Appellant additionally contests the Examiner’s conclusion of obviousness on the basis that the Examiner has set forth no apparent reason to combine the teachings of the references in reaching this conclusion. (Appeal Br. 15). The Examiner has, however, presented sufficient reasons to combine the teachings. The Examiner has stated that it would have been obvious to modify the GB ‘449 device to include the claimed reusable temperature indicator, “for the purpose of providing means to visually

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<sup>1</sup> Claim 1 is not a process or method claim actually requiring the attainment of a temperature of at least 60° C., rather the claim requires that the collective insulation structures are sufficient to enable the device to achieve a water temperature of at least 60° C.

inspect and monitor the temperature history of a water heating cycle during operation of the heater to pasteurize water”, and to position or secure the temperature indicator to the cap “so as to provide ease of access and operation thereof”. (Answer 6). Further, the Examiner states that it would have been obvious to provide a second insulation layer on the bottom of the GB ‘449 device, in view of Burkhardt, “to aide [sic.] in limiting heat loss” and to achieve temperatures of up to water boiling temperatures, as is disclosed in Burkhardt. (Answer 10). These are illustrative examples, and the Examiner’s thorough explication of the relevance of the prior art references to the claimed invention buttress the Examiner’s conclusion of obviousness.

Having reached the conclusion that the Examiner has established a prima facie case of obviousness with respect to claim 1 and those claims grouped with claim 1, we must consider the evidence of secondary considerations asserted by Appellant as weighing in favor of the nonobviousness of the claimed invention. Once that evidence is considered, the issue of obviousness is to be considered anew, carefully weighing the facts tending to evidence obviousness with the facts tending to evidence nonobviousness. *In re Eli Lilly*, 902 F.2d at 945.

The evidence advanced is in the form of a Declaration Under 37 C.F.R. § 1.132 of Frank D. Husson (“Husson Declaration”), the Appellant herein, and exhibits attached thereto identified as Exhibits A through F.16. (Appeal Br., Evidence Appendix). The Husson Declaration, for the most part, identifies, describes and/or characterizes the nature of the exhibits, and states that the exhibits “demonstrate the world wide need for and distinct advantages of a low cost and effective water pasteurization process, as

provided in claim 1,” and “demonstrate both a long felt need and expected commercial success of the claimed solar water heater and pasteurizer.” (Husson Declaration, p. 2). The exhibits are also said to “provide evidence that prior to the Solar Solutions AquaPak, produced according to claim 1, no product meeting these needs was available,” and “provide evidence of the potential commercial success of the Solar Solutions [AquaPak].” (Husson Declaration, p. 6).

The Examiner has assessed the evidence presented at pages 16-19 of the Answer, and we largely agree with the characterization and analysis of the proffered evidence set forth therein. The additional discussion which follows is intended to supplement the Examiner’s analysis.

The evidence appears to adequately establish that there is a long felt need to provide disinfected water to populations in developing countries, in order to reduce sicknesses arising from drinking water contaminated with pathogens. (Husson Declaration, Exhibit C). Exhibit C, which includes only several pages of excerpts from a paper prepared by the National Renewable Energy Laboratory in January 1998, presents comparisons of various technologies for disinfecting water, with an apparent emphasis on solar technologies. The exhibit notes that batch solar processing, the category into which the claimed invention falls, is a good choice for Small-Volume systems, such as the low-volume end of urban markets and remote single families. (Exhibit C to Husson Declaration, pp. 59-60). The exhibit also notes that batch solar systems are too low in volume for Medium-Volume systems (*Id.* at p. 60), and thus also presumably too low in volume for Village-Volume systems, which, according to Table 5.2-1 (*Id.* at 59), are approximately five times larger than Medium-Volume systems.

The invention as presently claimed is thus shown by Exhibit C to not provide a solution to the long-felt need for water-disinfecting systems in at least two of the three capacity categories identified in the exhibit. In the Small-Volume category in which batch solar processing is reported to be a good choice, the evidence (*see, e.g.*, Exhibits F.1 to F.16) shows several instances around the world of interest in, but not widespread acceptance of, the flexible container that is the subject of Appellant's claim 1. Considering Exhibits F.1 to F.16 collectively, it appears that less than 100 sample bags had been distributed or sold at wholesale, and even a smaller number had been put to use in any meaningful way.

Nothing in the evidence establishes that the claimed invention is in the process of being commercialized, which could be probative of a recognition in the art or relevant market that the claimed invention is regarded as a solution to a long felt need. The Husson Declaration asserts that the attached exhibits evidence either expected or potential commercial success. Those assertions are nothing more than speculation. We are unaware of any precedent that would have us assign any substantial weight to speculative assertions of this type.

Evidence of long felt need must show that the problem solved by Applicant's invention was known but not solved prior to the invention. *See Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1325 (Fed. Cir. 1999). To show failure of others, the evidence must establish that others skilled in the art tried and failed to find a solution for the problem solved by the Applicant. *Stratoflex*, 713 F.2d at 1540. The evidence of record is lacking in this respect.

One must also show that the others who failed had knowledge of the

critical prior art. *In re Caveney*, 386 F.2d 917, 923 (CCPA 1967). While Appellant's attachments do show evidence that solutions were being sought to provide systems for disinfecting water, Appellant has failed to establish that those skilled in the art tried and failed to find a solution or that those in the art had knowledge of the critical prior art, such as the GB '449 patent cited by the Examiner. Accordingly, Appellant's evidence of long felt need is entitled to but little weight.

Weighing this evidence together with the evidence in the form of the teachings of the prior art references cited by the Examiner, we conclude that the evidence of obviousness outweighs the evidence of nonobviousness. The proposed modifications to the device disclosed in the GB '449 patent are simply refinements or enhancements to the known flexible water-tight resealable container for heating and disinfecting water using batch solar processing, which modifications are drawn from closely-related art. In contrast, the evidence in support of non-obviousness does not persuasively show that such modifications were, for whatever reason, beyond the level of skill of those of ordinary skill in the art.

The rejection of claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 under 35 U.S.C. § 103(a) will thus be sustained.

*Claims 10, 14, 15 and 44--Obviousness--GB '449 in view of SODIS, Burkhardt, Ryder, Brewer and Stoumen*

Appellant presents no arguments for claims 10, 14, 15 and 44 that are different from those raised with respect to claim 1. For the same reasons articulated above, the rejection of claims 10, 14, 15 and 44 will also be sustained.

## CONCLUSIONS

The evidence and analysis of record weigh in favor of a conclusion that the subject matter of claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 would have been obvious over GB '449 in view of SODIS, Burkhardt, Ryder and Brewer. Similarly, the evidence and analysis of record weigh in favor of a conclusion that the subject matter of claims 10, 14, 15 and 44 would have been obvious over the references identified in the preceding sentence, and further in view of Stoumen.

#### DECISION

The decision of the Examiner to reject claims 1, 3, 6, 7, 9, 10, 12-15, 17-22, 26, 37-39, 43, 44 and 47 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

#### AFFIRMED

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FOLEY & LARDNER LLP  
P.O. BOX 80278  
SAN DIEGO, CALIFORNIA 92138-0278